# A study on *In vitro* culture conditions for plant regeneration of *Santalum album* (White sandalwood)

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# A study on *In vitro* culture conditions for plant regeneration of *Santalum album* (White sandalwood)

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The present study covers *in vitro* culture conditions for plant regeneration of *Santalum album* (White sandalwood); a medicinally and economically important plant. Medicinal and perfumery properties reside in sandalwood. Due to a combination of environmental requirements and necessity for living on a host plant, *Santalum album* is not easy to propagate.

The objective of this research was to study some *in vitro* conditions for plant regeneration of *Santalum album*, an endangered plant in Sri Lanka. Mother plants were identified within University premises. An effective surface disinfestation procedure was established. Leaf, apical bud, axillary bud and seed from mother plants of different maturity were tested on different culture media.

For callus induction and shoot proliferation, MS medium with no hormones, 1 /2 strength of MS medium and MS medium supplemented with varying concentrations of growth hormones were tested. Highest rate of shoot proliferation from axillary nodal explant was shown on 1 /2 strength of MS medium with no hormones. Proliferated shoots were transferred onto the same medium but the shoots dried after 2 weeks of transfer.

Callus induction from *S. album* seed explant was achieved with MS medium supplemented with TDZ 0.1 mg/L. Callus was sub cultured on 1 /2 strength of MS medium supplemented with BAP 1.0 ml/L for shoot induction. Callus induction from *S. album* leaf explant was

shown after 5 months of inoculation on MS medium supplemented with 2, 4 – D at 1.0 mg/L with TDZ at 0.1 mg/L. Callus induction from shoot explant was obtained at 3 months of inoculation on 1 /2 strength of MS medium with no hormones.

Mother plants in open, sunny area showed a high percentage of browning. Young leaf explants, apical buds and young seed explants were not suitable for inoculation. The present study reveals that 1/2 strength MS medium with no hormones showed fast results in rapid shoot proliferation while MS medium supplemented with TDZ 0.1 ml/L was the most suitable medium for callus induction from axillary buds.